

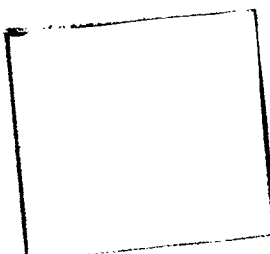
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A DISCUSSION OF PROBLEMS OF PHYSIOLOGY
- USSR -

by
Prof. L. G. Voronin

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FOREWORD

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A DISCUSSION OF PROBLEMS OF PHYSIOLOGY

- USSR -

Following is a translation of an article by Prof. L. G. Voronin in Vestnik Akademii nauk SSSR (Journal of the Academy of Sciences USSR), Vol. XXIX, No. 9, September 1959, Moscow, pages 105-106.⁷

About 1,400 physiologists, pharmacologists, biochemists, and representatives of other physiological sciences participated in the regular IX Conference of the All-Union Society of Physiologists imeni I. P. Pavlov, the present name of the All-Union Society of Physiologists, Biochemists, and Pharmacologists adopted by the resolution of the Conference. The new name of the Society was adopted for the reason that at the present level of the development of the physiological sciences, not only physiologists, biochemists, and pharmacologists, but biophysicists, histologists, cytologists, and representatives of other fields of science who are studying the functions of the organism, may be members of the Society.

About 450 scientific papers devoted to various problems of physiology, pharmacology, and biochemistry, and particularly to such urgent problems as the physiology and pathology of the higher nervous functions of man and animals, the physiology and pharmacology of coronary circulation, electrophysiology, the physiology of digestion, secretion, and the endocrine system, corticovisceral physiology, the autonomic nervous system, the physiology of work and sport, metabolism in the organs and tissues, biosynthesis of protein and nucleic acids, problems of biophysics and radiology, and others were read at the 32 sectional sessions and 13 symposiums of the Conference, which was held in Minsk from 10 to 18 June.

The Conference heard and discussed the report of the Central Council of the Society on the activities in the period between the VIII and IX Conferences, and elected the members of the new Council.

A resolution adopted by the Conference pointed out that considerable work in the matter of strengthening the organization of the Society and in the recruitment of scientific workers into its ranks was done in the period accounted for (the membership of the Society has

grown from 2,700 to 3,500). Most of the local branches of the Society held regular scientific sessions at which scientific problems were discussed. Communications with other scientific societies improved.

The resolution examined also the general status of the physiological sciences in the country. The conference noted in particular the noticeable increase in the number of problems being investigated. The results of some investigations have contributed considerably to the development of the country's medicine and several branches of the national economy.

However, the resolution emphasized, the progress achieved by physiologists, biochemists, and pharmacologists is inadequate when compared with the extremely important problems which the XXI Congress of the Communist Party of the Soviet Union confronted science, and the favorable conditions which the country created for their solution. Not all of the potentials which exist for the wide and productive development of the physiological sciences have as yet been utilized. In a number of cases the theoretical level of the work which has been done is low; there are shortcomings in plans made for physiological research to be done in the country; there is lacking a clear shaping of the functions of the physiological institutes of different systems and departments (Academy of Sciences USSR, Academy of Medical Sciences USSR, Academy of Pedagogical Sciences RSFSR, All-Union Academy of Agricultural Sciences imeni V. I. Lenin, the republican academies of sciences, universities, and so forth). The results of scientific-research work are unsatisfactorily being applied in public health, pedagogics, agriculture, and other branches of the national economy. The achievements of physics, chemistry, and the technical sciences are not being utilized sufficiently. The teaching of physiology and pharmacology in higher schools of education lags behind the growth of these sciences and does not to full extent provide the knowledge which is required of those who graduate as specialists from the higher schools.

In the next few years physiologists, pharmacologists, and biochemists must solve a number of theoretical and practical scientific problems which are closely linked with the problems of the new period of the building of a Communist society in our country. The report of the Central Council of the Society and talks by the participants in the conference pointed out in particular that research work must aim at the solution of the problems of the harmonious cooperation of mental and physical labor, problems of proper nutrition, prophylaxis and therapy of the more important diseases, the bringing up and development of children and adolescents, and the preservation of the work capacity of older persons.

The conference pointed out a number of problems the solution of which requires the concentration of the efforts of research workers. Among these are the physiology and pathophysiology of the higher nervous functions of man and animals, and mainly the study of the interaction of the signal systems of healthy and ill persons. It is recommended that particular attention be paid to the search for new methodical methods of investigation, methods which correspond to the complexity of the studied phenomena.

A priority problem is that of the regulation of the activities of organs and systems.

Considerable importance is attached to the study of the laws which regulate the course of physiological functions (particularly the coronary and cerebral blood circulation, respiration, digestion, secretion, hormonal and other functions), and the laws which regulate the activity of analyzers in normal and pathological states. This is connected with the necessity for answering a number of questions which are set forth by the development of industry, aviation and space medicine, sport, and others.

The list of the more important problems includes also cell physiology and biochemistry; the investigation of the structure, functions, and the mechanism of the formation and transformation of biochemically active substances; the search for new medicinal substances and the study of the mechanism of their action; the clarification of the effect of factors of the external medium on physiological functions (various types of radiation energy, mechanical and electromagnetic fluctuations, accelerations, and so forth), and problems of space and aviation medicine.

The conference recommended that steps be taken to assure a thorough development of these and other problems by utilizing various approaches and methods: studying them in their evolutionary and comparative-physiological aspects, on a cellular level, on the whole organism, in acute and chronic experiments on animals, in the clinic.

Intensification in the field of ideological work has been recognized as one of the more important problems: activization of the struggle against bourgeois theories and points of view; carrying out jointly with philosophers work on the more important philosophical problems of natural science; broadening the scientific-atheistic propaganda of the foundations of materialistic Pavlovian physiology.

The Conference issued instructions to the new members of the Central Council of the Society, and adopted a resolution calling the attention of the Ministries of Health, Higher Education, Agriculture, the Academy of Medical Sciences USSR, and the Academy of Pedagogical Sciences RSFSR to the necessity for implementing certain measures in order to intensify scientific-research and pedagogic work.

The resolutions adopted by the Conference contain also a number of other recommendations which call for solution of the problems placed before the physiological sciences by the new historical period of the building of Communism in our country.

Professor P. S. Kupalov, an active member of the Academy of Medical Sciences USSR, was elected Chairman of the Council at the First Session of the new Members of the Central Council of the All-Union Physiological Society imeni I. P. Pavlov.

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